

FIRST DESCRIPTION AND NEW RECORD OF
LARVAE OF *KURTOMATHRIPS* MOULTON
(THYSANOPTERA: THRIPIDAE)

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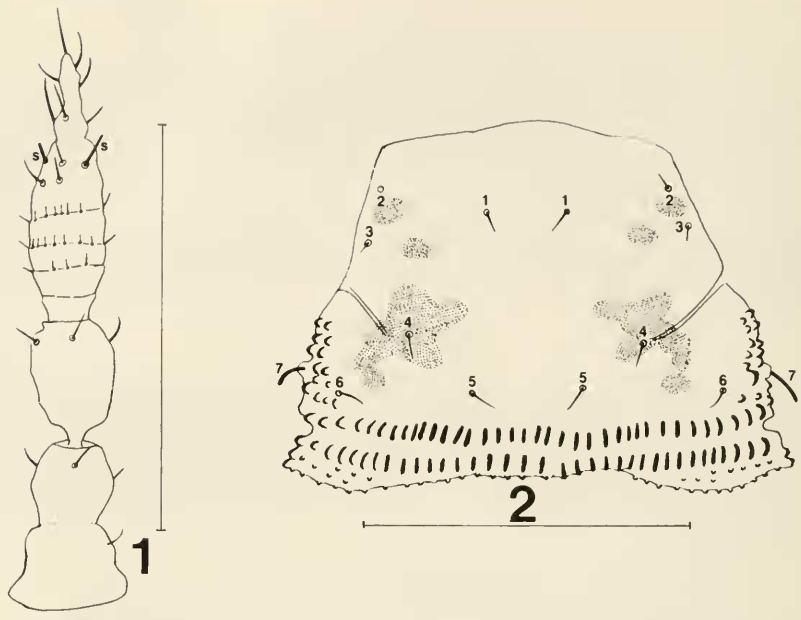
Abstract.—Second-instar female larvae of *Kurtomathrips morrilli* Moulton and *Kurtomathrips brunneus* (Watson) are described and separated in a key. The first instar female of *K. brunneus* and second instar male of *K. morrilli* are also described, and a new host plant record is given for *K. morrilli*.

The genus *Kurtomathrips* Moulton consists of three species. *Kurtomathrips morrilli* Moulton and *K. brunneus* (Watson) have been collected from several hosts in western United States (Bailey, 1957; Sakimura, 1956) and Mexico (O'Neill, 1970). In addition *K. morrilli* Moulton has been reported from Jamaica (Bailey, 1961) and Hawaii (Bianchi, 1956). The third species, *K. anahuacensis* Johansen Naime, is known only from adults on grasses in Mexico (Johansen Naime, 1974). Moulton (1927) reported nymphs of *K. morrilli* from cotton in Arizona but described only the adults. In this paper, the larvae of *K. morrilli* and *K. brunneus* are described. This is the first report known to the author of *K. morrilli* both on soybeans, *Glycine max* (L.) Merr., and in Mexico, although this species is known from an unspecified legume in western United States (Sakimura, 1956).

The four descriptions in this paper separate specific immature forms. In general second instars of Thripidae have three pairs of setae on the ventral side of each medial abdominal segment; first instars have one pair (Speyer and Parr, 1941). Males of both instars have one more pair of setae than females on abdominal segment IX (Priesner, 1960).

MATERIALS AND METHODS

Associated larvae and adults of *K. morrilli* were obtained in alcohol from Mexico and slide-mounted in balsam or Hoyers medium. Additional adult and larval specimens of *K. morrilli* and *K. brunneus*, previously mounted in balsam, were obtained from the Illinois State Natural History Survey



Figs. 1-2. *Kurtomathrips morrilli*, second instar female. 1, Antennal segments I-VI, dorsal aspect; s = sense cone. 2, Pronotum. Each scale line = 0.10 mm.

(INHS). Figures of slide-mounted specimens were prepared with a camera lucida.

KEY TO SECOND-INSTAR FEMALE LARVAE OF
K. MORRILLI AND *K. BRUNNEUS*

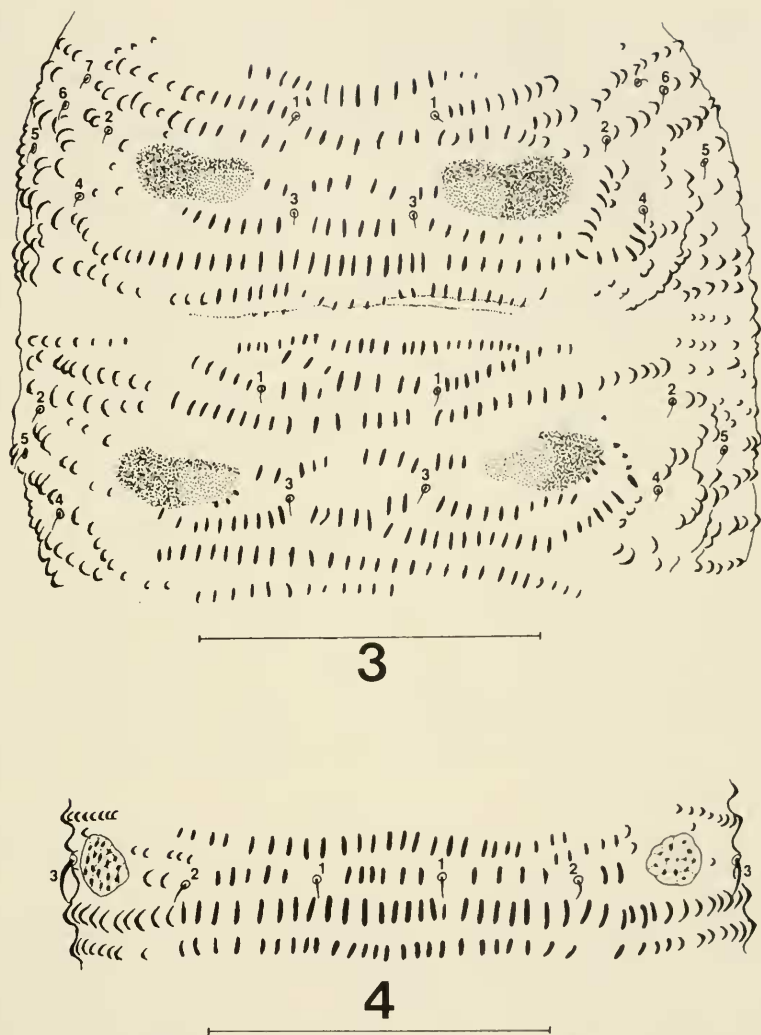
Differences in the antennae of the two species are more difficult to observe than the characters of the thorax and abdomen.

- Mesonotum with 2 pairs of anterolateral setae (setae 6 and 7 of Fig. 3). Abdominal segment IX with setae 1 and 2, and X with setae 1, acute to blunt (Fig. 5) *Kurtomathrips morrilli* Moulton
- Mesonotum with only 1 pair of anterolateral setae in place of setae 6 and 7 of Fig. 3. Abdominal segment IX with setae 1 and 2, and X with setae 1, knobbed (Fig. 6) *Kurtomathrips brunneus* (Watson)

Kurtomathrips morrilli Moulton
Figs. 1-5

Kurtomathrips morrilli Moulton, 1927: 188.

Second instar female.—*Head*: Antennal segment I lightest, almost clear on outer side, light brown on inner side; II light brown in basal 2/3, clear in



Figs. 3-4. *Kurtomathrips morrilli*, second instar female. 3, Mesonotum and metanotum. 4, Abdominal segment II, dorsal aspect. Each scale line = 0.10 mm.

apical $\frac{1}{3}$; III light brown in basal $\frac{1}{2}$, almost clear in apical $\frac{1}{2}$; IV-VI light brown, same shade. Antennal segment I with 1 inner seta; II with 4 subapical and 1 medial seta; III with 4 setae on apical $\frac{1}{2}$; IV with 3 sense cones and 5 setae on apical $\frac{1}{4}$, 1 sense cone noticeably shorter; V with 4 setae; VI with 3 setae in apical $\frac{2}{3}$ plus 1 longer apical seta. Antennal segment IV with at least 3 rows of microtrichia, other segments without microtrichia. Capsule

light yellow, with 1 seta between each eye and base of antenna, with 1 smaller postocular seta. All setae acute.

Thorax: Prothorax with light brown pigment spots; 1 major pigment area on each side in posterior $\frac{1}{2}$, often appearing as fusion of smaller spots; small, lateral, oval spots in anterior $\frac{1}{2}$; 2 basal transverse rows of tubercles and irregularly placed posterolateral tubercles. Pronotum with 7 pairs of minute setae. Between pronotum and mesonotum 1 pair of light brown, oval, sublateral spots. Mesonotum with 2 rows of setae (pairs 1-4), 2 mediolateral setae (pair 5) and 4 anterolateral setae (pairs 6-7). Metanotum with 2 rows of setae (pairs 1-4), and 2 mediolateral setae (pair 5). All setae acute except blunt pronotal pair 7. Mesothorax and metathorax each with 1 pair of light brown sublateral pigment spots located between setae 1 and 3 medially and setae 2 and 4 laterally; pigment spots each lighter on medial side; each with about 6 transverse anastomosing rows of tubercles. Femora light brown in basal $\frac{1}{3}$, almost clear in distal $\frac{2}{3}$. Tibiae light brown.

Abdomen: Light yellow. Segment I with 1 dorsal row of 4 setae (pairs 1-2), and on each side 1 minute seta (pair 3) anteromedial to seta 2. Segments II-VI each with 1 dorsal transverse row of 6 setae (pairs 1-3). Segments I-VIII each with 4 transverse rows of tubercles, with smaller anterior and posterior rows often present; IX and X without tubercles. Segment IX with 5 pairs of setae near distal margin, pairs 1 and 2 largest, 3 and 5 smallest, 1 and 2 inserted dorsally, 3 and 4 inserted on or near sides, 5 inserted ventrally. Segment X with 4 pairs of setae near distal margin, pair 1 largest, 2 smallest, and 1 and 2 inserted dorsally, 3 inserted on or near sides, 4 inserted ventrally. All setae acute except larger pairs on IX and X often appearing blunt.

Larvae studied: Nine ♀ in INTSOY collection: Mexico, Sonora, near Santa Maria, 28 September 1973, collector J. M. Casillas, soybeans. One ♀ in INHS collection: Arizona, 23 July 1943, cotton.

Second instar male.—Similar to female but lighter; antennal segment IV clear at base. Abdominal segment IX distinctly different; 6 pairs of setae near distal margin; pairs 1 and 2 largest; 3, 5, and 6, smallest; 1 and 2 inserted dorsally; 3 and 4 inserted on or near sides; 5 and 6 inserted ventrally. Male setae averaging 0.8 of length of female setae.

Larvae studied: Two ♂ in INTSOY collection: Mexico, Sonora, near Santa Maria, 28 September 1973, collector J. M. Casillas, soybeans.

Kurtomathrips brunneus (Watson)

Figs. 6-8

Prosopothrips brunneus Watson, 1931: 51.

Kurtomathrips unicolor Bailey, 1961: 258.

Second instar female.—*Head:* Antennal segment I lightest, almost clear on outer side, light brown on inner side; II and III each light brown in basal

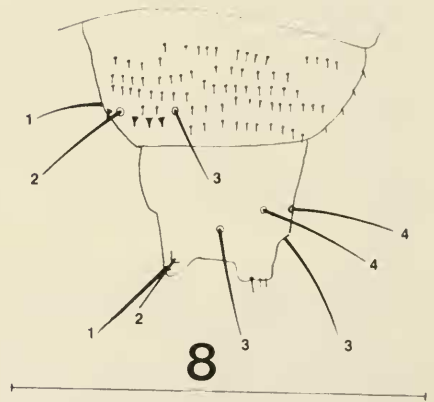
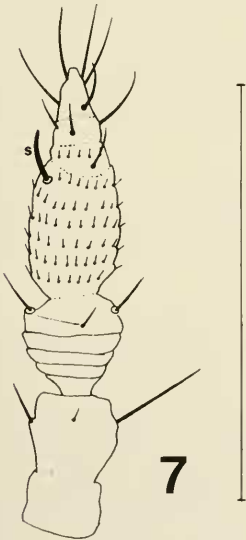
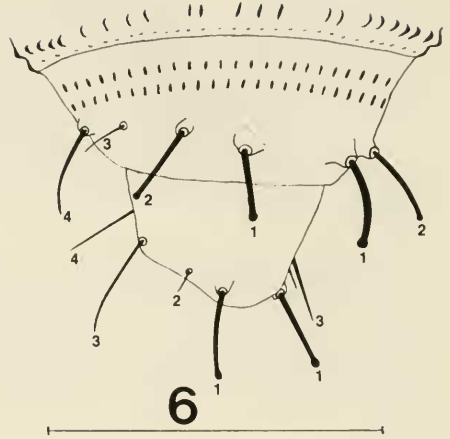
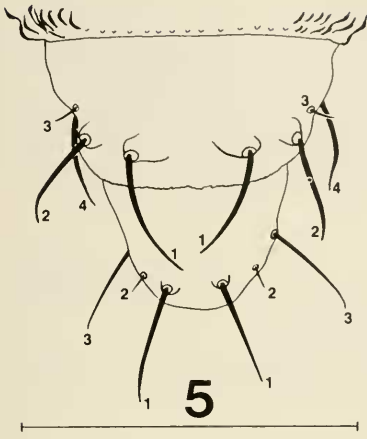


Fig. 5. *Kurtomathrips morrilli*, second instar female, abdominal segments IX-X, dorsal aspect. Figs. 6-8. *K. brunneus*. 6, Second instar female, abdominal segments IX-X, dorsal and lateral aspects. 7, First instar female, antennal segments I-VII, lateral aspect; s = sense cone. 8, First instar female, abdominal segments IX-X, lateral aspect. Each scale line = 0.10 mm.

$\frac{1}{2}$, clear in apical $\frac{1}{2}$; IV–VI light brown, same shade. Antennal segment I with 1 small inner seta; II with at least 4 setae in apical $\frac{1}{2}$; III with 4 subapical setae and 1 subapical sense cone; IV with 3 subapical setae and 3 subapical sense cones; V with 3 setae and 1 sense cone in apical $\frac{1}{2}$; VI with 4 setae below apex and 1 longer apical seta. Antennal segment III with 4 rows of microtrichia, IV with 5 such rows, other segments without microtrichia. Capsular color and chaetotaxy agreeing with second instar of *K. morrilli*.

Thorax and abdomen: Agreeing with description of second instar female of *K. morrilli* except mesonotum with only 1 pair of anterolateral setae, abdominal segment IX with 2 dorsal transverse rows of weak tubercles, IX with setae 1 and 2 knobbed, X with setae 1 knobbed.

Larvae studied: Three ♀ in INHS collection: Colorado, International Biological Program in the Grasslands, 27 July 1972, from *Bahia* sp. (Gramineae).

First instar female.—*Head:* Antennal segments light yellow to light brown without abrupt differences in shade; II and III each with 4 setae on apical $\frac{1}{3}$; II with 1 seta longer than any seta on III–VI; IV with 2 subapical setae on side opposite to only sense cone on IV; V and VI each with 3 setae and 1 sense cone; VII with 6 setae, none exactly apical. Antennal segment IV with 6 rows of microtrichia, the 5th row including 2 setae; III with several transverse ridges: I–III, V–VII, without microtrichia. Capsule light yellow with a few setae longer than on 2nd instar.

Thorax: Light yellow, same shade as head capsule. Tubercles absent. Mesonotum and metanotum each with several transverse rows of microtrichia. Femora light brown in basal $\frac{1}{3}$, almost clear in distal $\frac{2}{3}$. Tibiae light brown.

Abdomen: Light yellow. Segments I–IX each with about 5 transverse rows of microtrichia. Segments III–VIII each with 1 dorsal transverse row of 4 setae. Segment IX with 3 pairs of setae near distal margin; pair 2 longest; microtrichia along distal margin between setae fused into toothlike projections. Segment X with 4 pairs of setae, pair 2 shortest, other pairs similar in length, pair 1 dorsal, pair 4 ventral. Near posterior edge of segment X a few small setae and microtrichia, possibly part of vestigial segment XI.

Larva studied: One ♀ in INHS collection: same data as second instar of *K. brunneus*.

ACKNOWLEDGMENTS

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